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databases usable by untrained users (Col. 7, lines 48-53) thus it is important that the user interface is easy to use. Underneath these animation tools and the user interface, the '065 patent discusses using Lagrange equations (Col. 4, lines 50-61), unspecified genetic algorithm based computing techniques and various other methodologies to create animation sequences (Col. 5, lines 13-22). This animation system provides animators with the tools to pay only for animation sequences they generate with the system over the Internet and not pay for the entire software system (Col. 4, lines 5-10). In general, the '065 patent describes in detail a business model for generating revenue from animators performing animation over the Internet (Col. 15, lines 55-63) but gives no details implementing genetic algorithms.

In particular, the '065 patent does not describe a graphical user interface "displaying in a first portion thereof an evolution of a solution for genetic algorithm" as recited in Claim 1 as filed. Instead, Figure 3 and/or reference 370 of the '065 patent clearly illustrates a 3D wire frame model as the animation being performed. The '065 patent refers to this as "The Viewing Area 370" (Col. 12, lines 35-49) and describes it as having viewer play controls to play an animation, frame slider controls to skip to different frames of the animation and a total frame count to keep track of the frames in the animation. This is not a solution for a genetic algorithm but a rendering of a 3D wire frame model as used in an animation. Applicant respectfully submits there is no description or suggestion that Figure 3 and/or reference 370 displays anything concerning a genetic algorithm.

Similarly, the '065 patent also does not describe in Figure 3, reference 310 or elsewhere "an evolution parameter field in a second portion of said graphical user interface, said evolution parameter field having a first position, said evolution parameter field comprising at least one variable related to the evolution of said genetic algorithm" also recited in claim 1. As previously

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mentioned, Figure 3 is a user interface for creating animation sequences and solving problems related to animation but not for finding a solution to genetic algorithms. These are two distinct areas. Indeed, the '065 patent indicates that reference 310 as "Blending Area 310" allows the user to change specific animation areas (i.e., head, shoulders, hands, feet, etc.) and does not even mention making changes to any genetic algorithm through parameters or otherwise. This fact is further reinforced in the '065 patent indicating that the user changes blending motions from different body parts (Col. 14, lines 1-7) or whatever animation may be in the blending area 310.

Applicant further submits that the '065 patent does not describe a "modification means for modifying the evolution of said solution for said genetic algorithm in real time based upon a positional adjustment of said evolution parameter field from said first position to a second position" as recited in claim 1 either. Instead, the '065 patent only displays an animation or animation sequence and the various user interface tools to manipulate the animation (Col. 12, line 66 et seq.). In particular, the slider bar in Figure 3 concerns modifying the degree that the head in the 3D animation of the figure is going to 'look up'. Moving the head up or down by way of a slider is not the same or even remotely equivalent to modifying the real time parameters used in a genetic algorithm solution.

With reference to claim 2, the '065 patent does not describe or suggest using an "evolution parameter field as a slider" because the '065 patent concerns manipulating animation and not genetic algorithms. Similarly, the '065 patent does not describe or even suggest that the "evolution parameter is manipulated by a mouse, joystick, knob, or touchpad" as recited in claim 3 or that the "evolution parameter field is adjusted from said first position to said second position" as recited in claim 9. This is understandable as the '065 patent does not even mention an evolution parameter field in the abstract or in conjunction with genetic algorithms. In several

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areas of the '065 patent it is clearly stated that the slider bar and other user interface components are used to modify individual body parts and manipulate motion sequences (Col. 7, lines 58-60). This usage precludes also using the slider bars for evolution parameters used in conjunction with a genetic algorithm.

The '065 patent also does not provide a variable related to the evolution of said genetic algorithm which "is a number of evaluations performed in said genetic algorithm" as recited in claim 4 and claim 11. Instead, the '065 patent describes handling predictive algorithms (Col. 8, lines 61 to Col. 9, lines 1-6) using Lagrange equations and other methods. These methods described are not related to genetic algorithm methods.

Further, the '065 patent does not teach or suggest "a direct manipulation of said genetic algorithm as indicated by the positional adjustment of said evolution parameter field, said direct manipulation being accomplished by overwriting a variable used in said genetic algorithm" as recited in claims 7 and 10. As previously described, the '065 patent concerns animation and providing a simple to use interface for performing animation (Col. 7, lines 48-53). Further, all controls of the user interface concern animation and producing animation sequences not solutions to genetic algorithms (Col. 11, lines 1-68 and Col. 12, lines 1-68). There is no discussion of manipulating genetic algorithms by the '065 patent as it is concerned with animation and not genetic algorithms.

The Examiner also rejected 5-6 and 12-13 under 35 USC 103 in view of the '065 patent and further in view of US Patent 5,970,487 (the '487 patent). According to the Examiner, the '065 patent teaches a genetic algorithm producing real time results controlled by slider inputs but does not teach the probability of chromosome bits being cutpoints or mutations as recited in the instant claims.

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The Applicant respectfully submits that the '065 patent does not teach that slider inputs can be used to control genetic algorithms. As previously described, the slider inputs in the '065 patent clearly are for controlling a user interface designed specifically for animation (Col. 7, lines 48-53; Col. 11, lines 1-68 and Col. 12, lines 1-68). Even if there was a basis for such an assertion, the Examiner has provided no motivation to combine the '065 patent with the '487 patent to result in claims 5-6 and 12-13 as claimed. Instead, it appears that the Examiner has engaged in hindsight to combine these two references as the '065 patent clearly does not suggest the need for solving genetic algorithms or the need for a user interface to the same.

For at least the reasons provided above, claim 1 is in condition for allowance. Independent claims 8 and 14 are also in condition for allowance for similar if not the same reasons provided with regard to claim 1. Dependent claims 2-7 and 9-13, and 15-16 are independently patentable and in addition remain patentable due to their dependency on independent claims 1, 8 and 14 respectively.

Attached hereto is a marked-up version of the changes made to the specification and claims by the current amendment. The attached page is captioned "**Version with markings to show changes made**".

Applicants have made a diligent effort to place the claims in condition for allowance. However, should there remain unresolved issues that require adverse action, it is respectfully requested that the Examiner telephone Leland Wiesner, Applicants' Attorney at (650) 853-1113 so that such issues may be resolved as expeditiously as possible.

For these reasons, and in view of the above amendments, this application is now considered to be in condition for allowance and such action is earnestly solicited.

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Respectfully Submitted,

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Date

Leland Wiesner

Leland Wiesner
Attorney/Agent for Applicant(s)
Reg. No. 39424

Leland Wiesner
Attorney
366 Cambridge Avenue
Palo Alto, California 94306
Tel. (650) 853-1113

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Version with Markings to Show Changes Made

1. (Original) A graphical user interface displaying in a first portion thereof an evolution of a solution for a genetic algorithm, said graphical user interface comprising:
an evolution parameter field in a second portion of said graphical user interface,
said evolution parameter field having a first position, said evolution parameter field comprising at least one variable related to the evolution of said genetic algorithm; and
modification means for modifying the evolution of said solution for said genetic algorithm in real time based upon a positional adjustment of said evolution parameter field from said first position to a second position.
2. (Original) The graphical user interface according to claim 1, wherein said evolution 1 parameter field is a slider.
3. (Original) The graphical user interface according to claim 1, wherein said evolution parameter field is manipulated by a mouse, joystick, knob, or touchpad.
4. (Original) The graphical user interface according to claim 1, wherein said variable related to the evolution of said genetic algorithm is a number of evaluations performed in said genetic algorithm.
5. (Original) The graphical user interface according to claim 1, wherein said variable related to the evolution of said genetic algorithm is a probability of any bit in a chromosome being a outpoint in said genetic algorithm.

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6. (Original) The graphical user interface according to claim 1, wherein said variable related to the evolution of said genetic algorithm is a probability of any bit in a chromosome being mutated in said genetic algorithm.

7. (Original) The graphical user interface according to claim 1, wherein said modification means comprises a direct manipulation of said genetic algorithm as indicated by the positional adjustment of said evolution parameter field, said direct manipulation being accomplished by overwriting a variable used in said genetic algorithm.

8. (Original) A method for dynamically modifying an evolution of a solution for a genetic algorithm, said method comprising steps of:

adjusting an evolution parameter field within a graphical user interface of a computer system from a first position to a second position, resulting in a positional adjustment, said evolution parameter field comprising at least one variable related to the evolution of said genetic algorithm;

updating the evolution of said solution for said genetic algorithm in real time based upon said positional adjustment in said step of adjusting; and
displaying the update of said solution for said genetic algorithm within the graphical user interface.

9. (Original) The method according to claim 8, wherein in said step of adjusting, said evolution parameter field is adjusted from said first position to said second position by a user.

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10. (Original) The method according to claim 8, wherein said step of updating comprises a direct manipulation of said genetic algorithm as indicated by the positional adjustment of said evolution parameter field, said direct manipulation being accomplished by overwriting a variable used in said genetic algorithm.

11. (Original) The method according to claim 10, wherein said variable used in said genetic algorithm is a number of evaluations performed in said genetic algorithm.

12. (Original) The method according to claim 10, wherein said variable used in said genetic algorithm is a probability of any bit in any solution being a cutpoint in said genetic algorithm.

13. (Original) The method according to claim 10, wherein said variable used in said genetic algorithm is a probability of any bit in any solution being mutated in said genetic algorithm.

14. (Original) A machine readable memory for storing computer code to act as a graphical user interface to a genetic algorithm, said memory comprising:
a first code section stored in memory for receiving an adjustment of an evolution parameter field within said graphical user interface from a first position to a second position, resulting in a positional adjustment, said evolution parameter field comprising at least one variable related to the evolution of said genetic algorithm;
a second code section stored in memory for updating the evolution of said solution for said genetic algorithm in real time based upon said positional adjustment in said step

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of adjusting; and
a third code section stored in memory for displaying the update of said solution
for said genetic algorithm within the graphical user interface.

15. (Original) The machine readable memory according to claim 14, wherein said memory exists
on a server.

16. (Original) The machine readable memory according to claim 14, wherein said memory exists
on a website.